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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,189	07/29/2003	Arkady Samuilovich Dyckman	138482-1	5681

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EXAMINER

KEYS, ROSALYND ANN

ART UNIT	PAPER NUMBER
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1621

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/629,189

**Applicant(s)**

DYCKMAN ET AL.

**Examiner**

Rosalynd Keys

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/24/04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Status of Claims***

1. Claims 1-7 are pending.  
Claims 1-7 are rejected.

***Information Disclosure Statement***

2. The information disclosure statement filed August 24, 2004 has been considered.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 112, first paragraph, for essentially the same reasons given in the previous office action, mailed June 23, 2004. Further, it appears from applicants' specification that the Applicants invention does not include all organic acids or carbonic acids. See Applicants specification beginning at page 3, line 11, wherein the Applicants point out that a known prior art method for producing CHP utilizes organic acids. However, the Applicants disclose that this is disadvantageous because under high temperature conditions (80°-120°C) partial decomposition of the ammonium salt occurs. Then beginning on page 4, the Applicants disclose that "Since ammonia features a significant volatility, the liquid phase predominately contains the acid that inhibits the cumene oxidation process. Moreover, it is economically inefficient to use ammonium salts of such relatively expensive organic acids as ethylenediaminetetraacetic acid or 1,10-decanedicarbonic acid. Thus, based on the above

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disclosures one having ordinary skill in the art would reasonably conclude that the Applicants do not teach the use of all ammonium salts of organic or carbonic acids, as claimed, since due to decomposition it would be uneconomical to utilize relatively expensive organic or carbonic acids. Further, as evidence that it appears that applicants invention does not include all organic acids is the fact that the terms organic acids and carbonic acids are disclosed only in reference to the prior art (see page 3, beginning at line 11. whereas, the terms ammonium bicarbonate, ammonium carbonate, ammonium carbamate and mixtures thereof appears in parentheses after the term ammonium salt (see page 8, lines 16 and page 9, lines 6 and 7).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the

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various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zakoshansky et al. (US 5,767,322), for the reasons given in the previous office action, mailed June 23, 2004.

#### ***Response to Amendment***

9. The objection to the specification due to a lack of a brief description of drawing has been overcome by an amendment to the specification filed, August 20, 2004. The objection is hereby withdrawn.

10. The rejection of claims 1-3 under 35 USC 112, second paragraph is withdrawn, due the amendment to said claims filed, August 20, 2004.

#### ***Response to Arguments***

11. Applicant's arguments filed August 20, 2004 have been fully considered but they are not persuasive.

#### **Rejection of claims 1-3 under 35 U.S.C. 112, first paragraph**

The Applicants believe this rejection should be withdrawn because the Applicants have amended claims 1-3, so that ammonium salts are limited to ammonium salts of organic acids or carbonic acids. The Applicants state that they have support for this

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amendment at least at page 3, line 13. This argument is not persuasive because page 3, line 13, is not directed to the instant invention, but to the prior art. For further reasons see the rejection to claims 1-3 and 5-7 under 35 USC 112, first paragraph as disclosed in paragraph 4 above.

For the above reasons this rejection is maintained.

Rejection of Claims 1-3 under 35 U.S.C. 103(a) as being unpatentable over Zakoshansky et al. (US 5,767,322)

The Applicants argue that absent in Zakoshansky et al. is any teaching or suggestion that would have lead one of skill in the art to Applicants' claimed ammonium salt to ammonia ratio with any reasonable expectation of success. This argument is not persuasive because the suggestion or motivation to modify a reference can be found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In the instant case, since the ratio of ammonium salt and ammonia are unknown from the reference (Zakoshansky et al.) the Examiner used knowledge generally available to one of ordinary skill in the art to modify the reference, i.e. that it would have been obvious to modify the process in order to optimize the results. Although Zakoshansky et al. do not disclose the ratio of ammonia to the ammonium salt present in their reaction, they do recognize that the presence of these compounds is necessary in order to improve process selectivity, reduce the level of phenol in the process streams and more effectively neutralize the undesirable formic and benzoic acids and that the ammonia must be present in an amount at least stoichiometric to the amount of by product organic acids (see column 3, lines 39-50 and column 4, lines 52-62). Thus, since Zakoshansky et al. recognize that the presence of ammonia and the ammonium salt,  $\text{NH}_4\text{NaCO}_3$ , and the amount of ammonia are result effective variables,

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one having ordinary skill in the art would have been motivated to modify these variables to optimize the process, with a reasonable expectation of success. Further, the  $\text{NH}_4\text{NaCO}_3$  is produced from the ammonia (see column 5, line 11-14). Thus, one having ordinary skill in the art would expect that the amount of the ammonium salt,  $\text{NH}_4\text{NaCO}_3$ , is effected by the amount of ammonia.

For the above reasons, this rejection is maintained.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalynd Keys whose telephone number is 571-272-0639. The examiner can normally be reached on M, R and F 3:00-8:00 pm and T-W 5:30-10:30 am.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Rosalyn Keys  
Primary Examiner  
Art Unit 1621

October 29, 2004